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Factor Structure of the Autonomy Preference Index in People with Severe Mental Illness

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Abstract

People vary in the amount of control they want to exercise over decisions about their healthcare. Given the importance of patient-centered care, accurate measurement of these autonomy preferences is critical. This study aimed to assess the factor structure of the Autonomy Preference Index (API), used widely in general healthcare, in individuals with severe mental illness. Data came from two studies of people with severe mental illness (N = 293) who were receiving mental health and/or primary care/integrated care services. Autonomy preferences were assessed with the API regarding both psychiatric and primary care services. Confirmatory factor analysis was used to evaluate fit of the hypothesized two-factor structure of the API (decision-making autonomy and information-seeking autonomy). Results indicated the hypothesized structure for the API did not adequately fit the data for either psychiatric or primary care services. Three problematic items were dropped, resulting in adequate fit for both types of treatment. These results suggest that with relatively minor modifications the API has an acceptable factor structure when asking people with severe mental illness about their preferences to be involved in decision-making. The modified API has clinical and research utility for this population in the burgeoning field of autonomy in patient-centered healthcare.

Keywords

autonomy; decision-making; patient-centered care; severe mental illness; confirmatory factor analysis

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1. Introduction

Autonomous decision-making, or the control a person wants in their treatment choices, has been an area of interest in healthcare research over the past two decades. The importance of patient preferences in this area is clear: a review of the literature on patient preferences for decision-making and information-seeking in healthcare found that the match between patient preferences and how treatment is provided affects both patient satisfaction and healthcare outcomes (Kiesler and Auerbach, 2006). Recently, interest in autonomy preferences has grown to include consumers of mental healthcare (e.g., Hamann et al., 2007a; O'Neal et al., 2008; Hamann et al., 2011). However, the measures used to assess autonomy preferences were developed and tested in general or chronic healthcare samples (Ende et al., 1989, Simon et al., 2010), leaving the question of whether the measurement techniques are valid in psychiatric populations.

One widely used self-report measure, the Autonomy Preference Index (API), was developed through a focus group of providers, medical sociologists, and ethicists who identified two key domains for patients' involvement in their own care: engagement in decision making and acquisition of knowledge about one's health (Ende et al., 1989). A confirmatory factor analysis supported the proposed two-factor solution. As the emphasis on shared decision-making and collaborative care increased in medical care, the measure quickly gained acceptance for assessing patient preferences in surgical (Doherty and Doherty, 2005) and primary care settings (Schneider et al., 2006), as well as general patient populations (Thompson et al., 1993) and those with chronic health conditions (Gibson et al., 1995; Adams et al., 2001). Studies using the API have linked autonomy preferences to satisfaction with the patient-doctor relationship and mental health-related quality of life following treatment (Lee and Lin, 2010).

In recent years the API has also been used with psychiatric populations, demonstrating that consumers of mental health services often want to be actively involved in making their own treatment decisions (Hamann et al., 2005; Hamann et al., 2011). However, consumers report differing levels of desired autonomy based on setting and personal characteristics (Hamann et al., 2008; Hamann et al., 2011). For example, one study found that consumers wanted a passive role in primary care encounters, a more collaborative role when making choices about psychiatric medications, and greater autonomy regarding psychosocial treatment decisions (O'Neal et al., 2008). This is consistent with findings in general medical care, showing that autonomy preferences vary based on a number of factors, such as health status and type of decision (Say et al., 2006).

The growing use of the API indicates increased attention to patient preferences and rights in medical settings, but some studies have raised questions about the psychometric properties of the measure when used with persons with severe mental illness (Hamann et al., 2007a; Puschner et al., 2013). Studies in psychiatric populations have reported alphas ranging from .88 for the decision-making subscale in a community mental health sample (Hill and Laugharne, 2006), to .79 in consumers with depression and .59 in consumers with schizophrenia (Hamann et al., 2007a), but the information-seeking subscale is used less often, limiting information on its performance in psychiatric populations. In addition to the

paucity of reliability estimates for the API, its factor structure has yet to be tested in those with severe mental illness.

Considering the implications that autonomy preferences can have for satisfaction and outcomes (Hamann et al., 2007b; Kiesler and Auerbach, 2006), it is important to accurately assess preferences in varied populations. The aim of this study was to assess the factor structure and performance of the API in a multi-study sample of individuals with severe mental illness. In keeping with the API's original development (Ende et al., 1989), we hypothesized a two-factor structure and used confirmatory factor analysis (CFA) to test the adequacy of the information and decision-making subscales as two distinct factors. Given the differing nature of primary care and psychiatric healthcare visits, we examined the factor structure of the API with regard to both types of treatment.

2. Methods

2.1. Participants

Data for this analysis came from two separate studies investigating autonomy preferences of people with severe mental illness (i.e., schizophrenia spectrum, bipolar disorder, or major depression) who were currently receiving outpatient mental health and primary care/ integrated care services. Across studies, approval was obtained from the local institutional review boards, and informed consent was obtained from all participants.

The first study was a randomized controlled trial evaluating an adaptation of the Illness Management and Recovery (IMR) program (Mueser and Gingerich, 2002) to incorporate training in the self-management of chronic medical conditions in addition to psychiatric disorders -- Integrated IMR (Bartels et al., 2014). Participants were recruited in New Hampshire from late 2006 to early 2009. In addition to having a severe mental illness, inclusion criteria for the study were: age 50 or older; receiving treatment at a community mental health center for at least the last 3 months**;** diagnosed with a chronic health condition (e.g., diabetes, chronic obstructive pulmonary disease, arthritis, hypertension); and no changes in psychopharmacological treatment over the past eight weeks. Exclusion criteria were: prior participation in the IMR program; living in a nursing home or psychiatric hospital; diagnosis of dementia; terminal illness with life expectancy of less than one year; or moderate to severe cognitive impairment, as indicated by the Mini Mental State Examination. The study had a total of 71 participants; for the purposes of these analyses, additional unpublished pilot data were also included, increasing the total number of participants to 126. Pilot participants were recruited before the main study from a large community mental health system in Chicago.

The second study included baseline data from an investigation of CommonGround, a program consisting of computerized decision support tools and peer support to enhance shared decision-making with psychiatric providers (Deegan et al., 2008). In addition to having a severe mental illness, inclusion criteria included: willingness to be interviewed 3 times over the course of 18 months and to have 3 sessions with psychiatric provider audio-recorded; and ability to pass a short quiz on the content of the informed consent document.

Consumers were excluded if they planned to change psychiatric providers during the 18-month study period (Bonfils et al., 2014).

A total of 293 participants were included in the combined dataset. Participants were predominantly male (54.9%), either White (51.9%) or Black (40.5%), and living independently (56.5%). Most participants had not completed any college (72.3%) and were unemployed (86.0%). The average age of participants was 50.2 years (SD = 11.3). More than half of the sample was diagnosed with a schizophrenia-spectrum disorder (N=150, 51.2%); an additional 37.8% (N=111) of the sample was diagnosed with a severe mood disorder. Four participants had “other” diagnoses (1.4%), and diagnostic information was unavailable for 28 participants (9.6%).

2.2. Measures

The Autonomy Preference Index (API) assesses autonomy preferences in medical decision-making (Ende et al., 1989). The original scale had 23 items: 6 Likert-style items and 9 responses to 3 vignettes (referencing physical illnesses) assessing preference for participation in decision-making, and 8 Likert-style items assessing preference for autonomy in information-seeking. However, many studies of psychiatric populations have excluded the vignette items, in part due to their focus on general medical illnesses (e.g., see Hamann et al., 2007a; O'Neal et al., 2008). Others have adapted these vignettes for psychiatric conditions (Hill and Laugharne, 2006), but adapted items have not been consistently used in psychiatric populations. Thus, only the 14 Likert-style items were tested in this study.

The first sample included in these analyses (Bartels et al., 2014), with a focus on integrated physical and psychiatric care, administered the API twice – once with regard to the psychiatric provider and once with regard to the primary care provider (though pilot participants were not asked about psychiatric providers). The second sample (Bonfils et al., 2014) only asked about autonomy preferences with regard to psychiatric providers, thus the sample sizes are different for psychiatric and primary care providers. A total of 234 participants provided complete autonomy preference data with regard to their psychiatric provider. A total of 123 participants provided complete autonomy preference data with regard to their primary care provider.

2.3. Analyses

Confirmatory factor analysis (CFA) was utilized to evaluate the fit of the hypothesized two-factor structure of decision-making autonomy and information-seeking autonomy of the API (Ende et al., 1989). We used a number of fit indices to assess the performance of CFA techniques, including the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), and the comparative fit index (CFI). Although chi-square statistics are reported here, they are heavily influenced by sample size, and so, although we strived for the lowest chi-square values possible, they were of less value in determining adequate fit. As recommended by Brown (2006), the model was considered to have “adequate fit” if the RMSEA and SRMR were less than .08, and the CFI was greater than .9; “good fit” was indicated by RMSEA and SRMR less than .05 and CFI greater than .95. CFA models were run for both psychiatric treatment and primary care treatment. In

exploring how to improve model fit in the psychiatric care sample, factor loadings for individual items were examined and problematic items were dropped. We also tested this modified model in the primary care sample in order to explore whether a common factor structure could be identified that fit for autonomous treatment decision-making for psychiatric and primary care conditions. All CFA analyses were conducted in LISREL version 8.80.

3. Results

See Table 1 for item means and standard deviations. The decision-making subscale means were in the middle of the scale (psychiatric $M = 2.81$, $SD = 0.68$; primary care $M = 2.85$, $SD = 0.73$), but the means for the information-seeking subscale were higher (psychiatric $M = 4.21$, $SD = 0.47$; primary care $M = 4.11$, $SD = 0.44$).

3.1. CFA - Psychiatric Providers

Fit indices and factor loadings for the CFA of the two-factor structure of the API are provided in Table 1. This model did not meet the criteria for adequate fit for either the SRMR or the RMSEA. Further, factor loadings are low (<0.30) for items 4, 6, and 11, indicating poor performance of these items within the two-factor structure. These three items are coded in the reverse direction from all other items on their respective subscales, suggesting that poor fit may be due to method factors. Because the original CFA exhibited inadequate fit to the data, a second CFA was conducted after dropping the problematic items (items 4, 6, 11). This model met criteria for adequate fit for all indices, and all factor loadings were .40 or higher (Table 1).

3.2. CFA – Primary Care Providers

Fit indices and factor loadings for the CFA of the two-factor structure with regard to primary care doctors are provided in Table 1. Again, the model did not meet cutoff criteria for the SRMR or RMSEA. Similar to the psychiatric provider sample, the primary care sample indicated a poor fit to the two-factor structure of the API. A similar second CFA was conducted, dropping items 4, 6, and 11 (Table 1). This model met criteria for adequate fit for all indices. All factor loadings were 0.50 or higher except for item 12 (factor loading = 0.10). We elected not to drop this item (“It is important to know all the side effects of your medication.”) despite its low factor loading because of its salience in the psychiatric provider sample and adequate overall fit of the model.

4. Discussion

Findings from this study indicated a poor fit for the factor structure of the most widely used version of the API with regard to both psychiatric and primary care treatment. For both CFA models, the three reverse-coded items had low factor loadings, and their removal resulted in an improved fit for the revised model. Given the growing importance of assessing and matching consumers on their autonomy preferences in healthcare, our findings suggest that the revised API may be a more sensitive measure of these preferences in people with severe mental illness.

One explanation for why respondents had difficulty with the three problematic items is that they may reflect somewhat different constructs. For example, items 4 (“you should feel free to make decisions about everyday medical problems”) and 6 (“you should decide how frequently you need a check-up”) represent smaller, everyday-type decisions that consumers may wish to make on their own, even while relying more on the doctor for the other decisions. Simon et al. (2010) also commented on this issue in their confirmatory factor analysis of the German API in hospital and primary care settings, suggesting that these two items may refer to decision-making more broadly, leading respondents to answer differently. Similarly, as noted by Simon et al. (2010), item 11 (“you should be given information only when you ask for it”) is the only one which actually references active information seeking (i.e., asking for information) as opposed to preferences about information given by providers.

An alternative explanation relates to the nature of negatively-worded items. To respond to these items consistently, one must be able to shift attentional set, frequently a problem for people with severe mental illnesses (e.g., see McKirdy et al., 2009; Pantelis et al., 2009; Giel et al., 2012). However, Simon et al. (2010) found a similar pattern in a sample comprised of people in emergency room care, internal and surgical inpatient care, and depression treated in primary care. This suggests that the set-shifting explanation is not specific to severe mental illness. Given the consistency of difficulties with these specific items and the similarity between the results of the current study and those of Simon et al. (2010), we recommend the elimination of items 4, 6, and 11 for further use of the API in mental health samples. Because we cannot know for sure whether the poor performance is due to set shifting or differential constructs imbedded in the scale, future work may address whether certain types of decisions and information gathering can be assessed more reliably with alternative wording.

Although the revised API model performed similarly overall for psychiatric and primary care decisions, item 12 (“it is important to know all the side effects of your medication”) had a low factor loading when participants were asked about autonomy with their primary care providers, but not with their psychiatric providers**.** One explanation may be that side effects are more salient to autonomy preferences in psychiatric treatment. There are often many choices of psychiatric medications, with varying types of side effects, such that finding the right one(s) can be an ongoing and dynamic process (Deegan and Drake, 2006). Therefore, learning the side effects of different medications may be particularly important to decision-making for psychiatric disorders. Although item 12 did not perform as well in the primary care sample, we opted to retain it for two reasons. First, a parsimonious solution that can work across settings will provide the most benefit to those who wish to use the API. Second, in some settings, primary care providers are the main prescribers of psychotropic medications. This item might then become more salient and operate more closely to its performance in the psychiatric sample. Future studies should examine this item more closely and in varied settings.

Although this study provides a much-needed look at the API for use with people with severe mental illness, the results should be interpreted in light of some limitations. First, our CFA included only the Likert-style items of the API and excluded vignette items. Although

vignette items of the API are frequently omitted when used in mental health samples (e.g., see O'Neal et al., 2008), their exclusion in our samples makes us unable to comment on how they fit into the current two-factor structure of the API. Second, the study did not utilize a hold-out sample to test the modified factor structure. Though we used multiple samples to examine the factor structure of the API with regard to psychiatric providers, we had only one sample for primary care providers, and results may not generalize to other samples. Future work should confirm the utility of this factor structure of the API for people with severe mental illness, with a specific focus on autonomy preferences in primary care encounters. Finally, each study required that participants be able to pass a short cognitive screener, indicating our results may not generalize to those with severe mental illness who also have cognitive difficulties. Future research should address the performance of the API in individuals with cognitive deficits.

Overall, results indicate that a modified API can be used successfully in people with severe mental illness. The factor structure of the API is greatly improved with the removal of items 4, 6, and 11, similar to previous findings in medical settings (Simon et al., 2010). In addition, with the exception of one item, the API functions similarly in this population when respondents are asked about primary care providers and psychiatric providers. Given past research indicating a negative association between autonomy preferences and patient satisfaction, perhaps driven by a mismatch between providers' perceptions of patients' preferences and patients' actual preferences (Hamann et al., 2007b; Kiesler & Auerbach, 2006), psychiatric and primary care services could be improved through routine assessment and discussion of autonomy preferences with patients. In this vein, it is important that researchers and clinicians use instruments with strong psychometric properties, such as high internal consistency of subscales, to ensure the construct is being assessed in as precise a manner as possible. Though our study adds to the psychometric evidence base by examining the API in a new population, there is further work to be done with regard to the API's validity. Future research should attempt to parse out whether eliminated items function poorly due to difficulties with set-shifting, or if there are in fact construct differences, which may warrant the expansion of the scale to include additional factors. Additionally, future work should further investigate the performance of item 12 in varied healthcare settings. Finally, research is needed that examines the construct validity of the API through its associations with related constructs in this population such as actual shared decision-making practice and activation in treatment.

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Highlights

- We conduct confirmatory factor analysis on the Autonomy Preference Index (API).
- We examine factor structure of the API in people with severe mental illness.
- The currently-used two factor structure was not an adequate fit in this population.
- Three problematic items, all reverse-scored, were dropped.
- The modified API has clinical and research utility for this population.

Table 1

Descriptive Statistics, CFA Factor Loadings & Model Fit Indices

Item		Mean	SD	Factor Loading Model 1	Factor Loading Model 2
1. Psychiatric Provider, Full Scale: X^2 = 206.46; df = 76; CFI = 0.90; SRMR=0.088; RMSEA=0.086					
2. Psychiatric Provider, Modified Scale: X^2 = 104.82; df = 43; CFI = 0.94; SRMR=0.076; RMSEA=0.079					
1.	The important medical decisions should be made by your doctor, not you. (R)	2.48	1.26	0.71	0.72
2.	You should go along with your doctor's advice even if you disagree with it. (R)	2.61	1.18	0.60	0.61
3.	When hospitalized, you should *not* be making decisions about your own care. (R)	2.79	1.27	0.55	0.53
4.	You should feel free to make decisions about everyday medical problems.	3.71	1.06	0.20	n/a
5.	If you were sick, as your illness became worse you would want your doctor to take greater control. (R)	2.00	0.93	0.62	0.61
6.	You should decide how frequently you need a check-up.	3.27	1.20	0.10	n/a
7.	As you become sicker you should be told more and more about your illness.	4.23	0.75	0.51	0.51
8.	You should understand completely what is happening inside your body as a result of your illness.	4.34	0.70	0.45	0.45
9.	Even if the news is bad, you should be well informed.	4.36	0.68	0.74	0.74
10.	You doctor should explain the purpose of your laboratory tests.	4.40	0.62	0.76	0.77
11.	You should be given information only when you ask for it. (R)	3.55	1.16	0.11	n/a
12.	It is important to know all the side effects of your medication.	4.04	1.12	0.44	0.44
13.	Information about your illness is as important to you as treatment.	4.42	0.62	0.82	0.82
14.	When there is more than one method to treat a problem, you should be told about each one.	4.38	0.59	0.70	0.70
1. Primary Care Provider, Full Scale: X^2 = 145.10; df = 76; CFI = 0.90; SRMR=0.091; RMSEA=0.086					
2. Primary Care Provider, Modified Scale: X^2 = 60.51; df = 43; CFI = 0.97; SRMR=0.056; RMSEA=0.058					
1.	The important medical decisions should be made by your doctor, not you. (R)	2.67	1.41	0.55	0.63
2.	You should go along with your doctor's advice even if you disagree with it. (R)	2.63	1.20	0.44	0.52
3.	When hospitalized, you should *not* be making decisions about your own care. (R)	2.89	1.28	0.63	0.59
4.	You should feel free to make decisions about everyday medical problems.	3.67	0.95	0.40	n/a
5.	If you were sick, as your illness became worse you would want your doctor to take greater control. (R)	2.03	0.99	0.63	0.59
6.	You should decide how frequently you need a check-up.	3.23	1.17	0.43	n/a
7.	As you become sicker you should be told more and more about your illness.	4.23	0.73	0.59	0.59
8.	You should understand completely what is happening inside your body as a result of your illness.	4.32	0.67	0.77	0.78
9.	Even if the news is bad, you should be well informed.	4.38	0.57	0.81	0.81

Item		Mean	SD	Factor Loading	
				Model 1	Model 2
10.	You doctor should explain the purpose of your laboratory tests.	4.39	0.55	0.83	0.83
11.	You should be given information only when you ask for it. (R)	3.57	1.18	0.26	n/a
12.	It is important to know all the side effects of your medication.	3.37	1.36	0.09	0.10
13.	Information about your illness is as important to you as treatment.	4.25	0.62	0.59	0.60
14.	When there is more than one method to treat a problem, you should be told about each one.	4.36	0.57	0.61	0.60

Note: Items 1-6 belong to the decision-making subscale, and items 7-14 belong to the information-seeking subscale. (R) = Reverse-coded item; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation. Adequate fit was evaluated with cutoff values of CFI > 0.90, SRMR < 0.08, and RMSEA < 0.08. Good fit was evaluated with cutoff values of CFI > 0.95, SRMR < 0.05, and RMSEA < 0.05.